RFQ fast tuning

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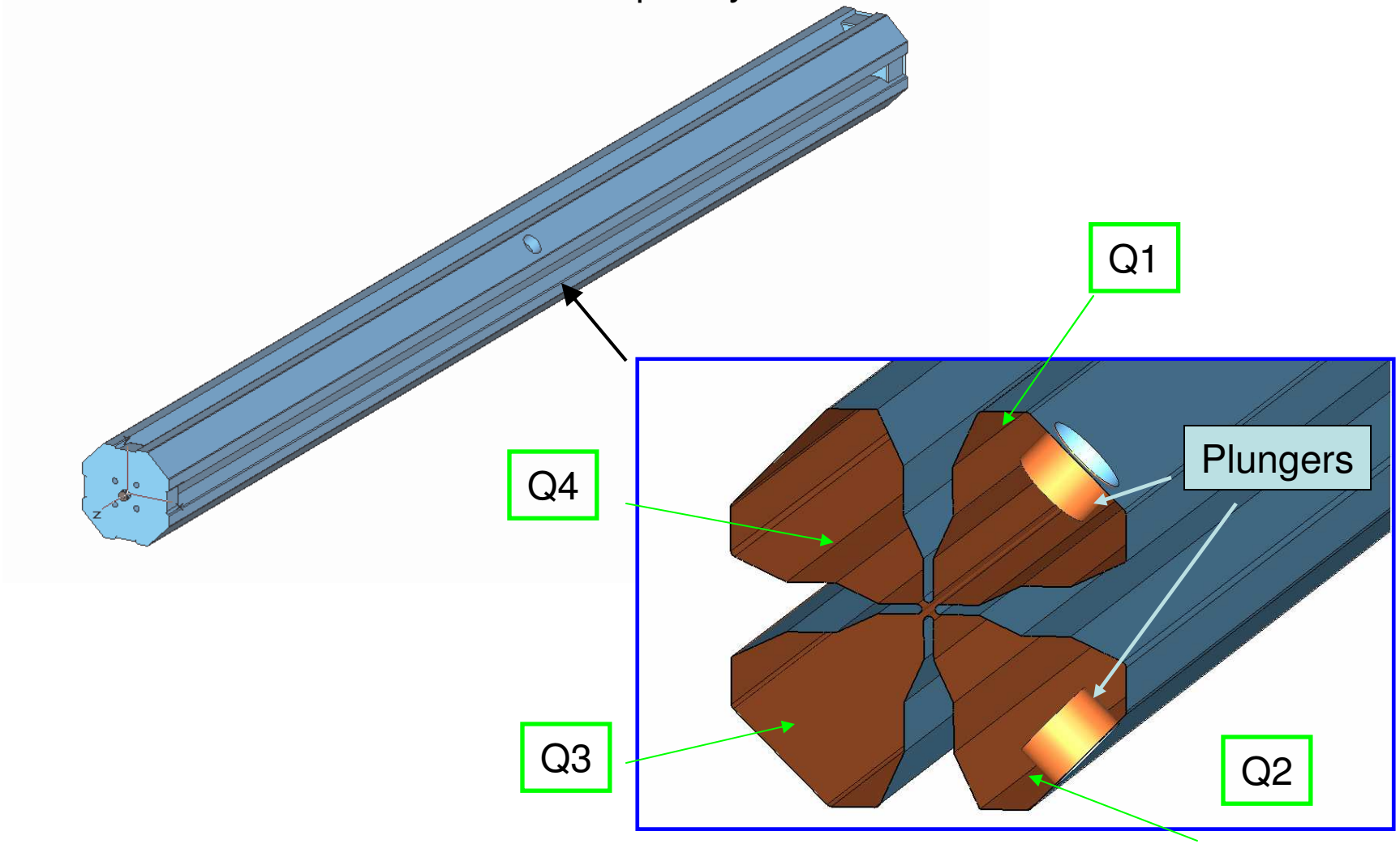
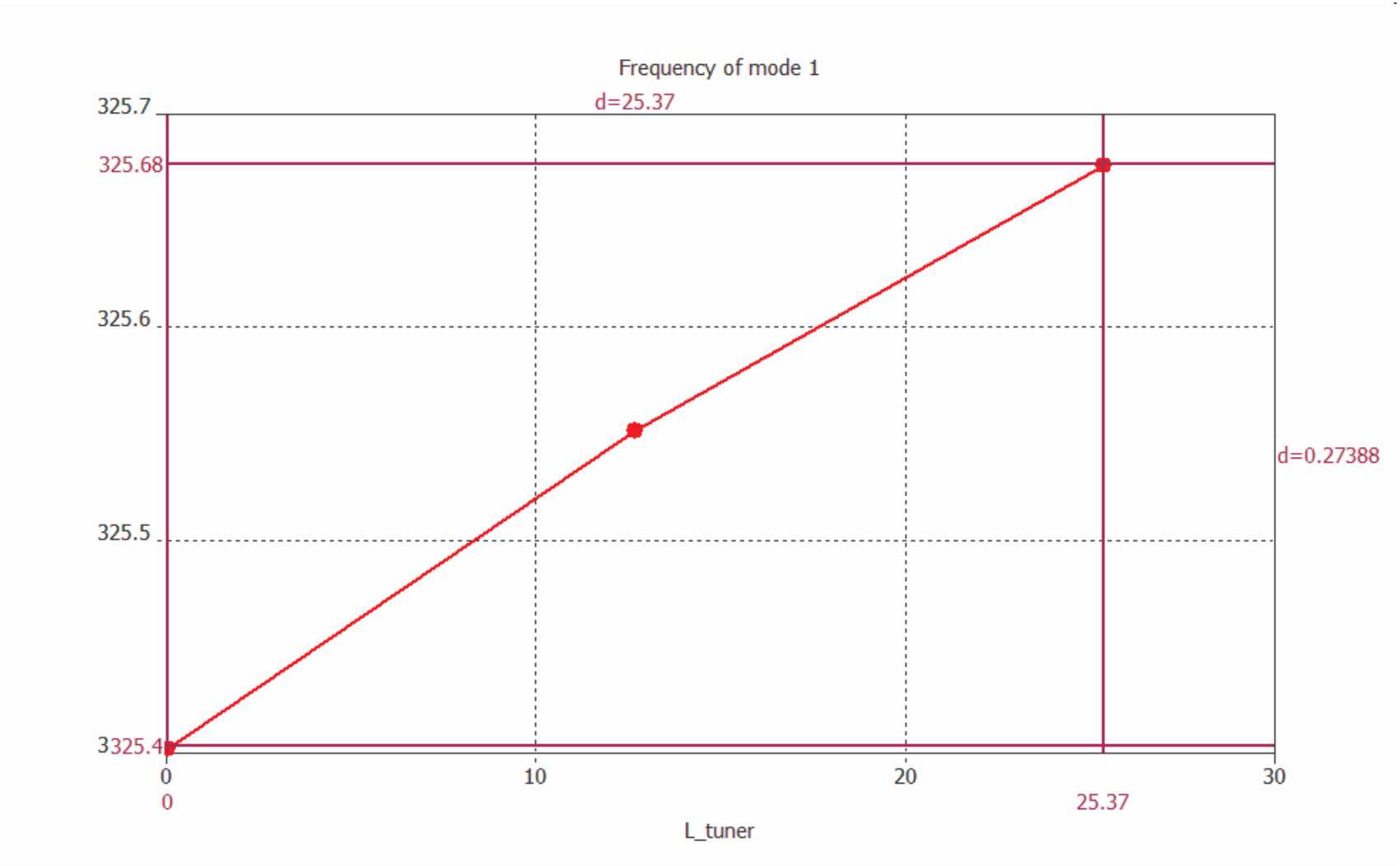
Two fast motorized tuners, diameter of plungers is 45.24 mm, full stroke 25.4 mm .
The tuners affect both frequency and field distribution.



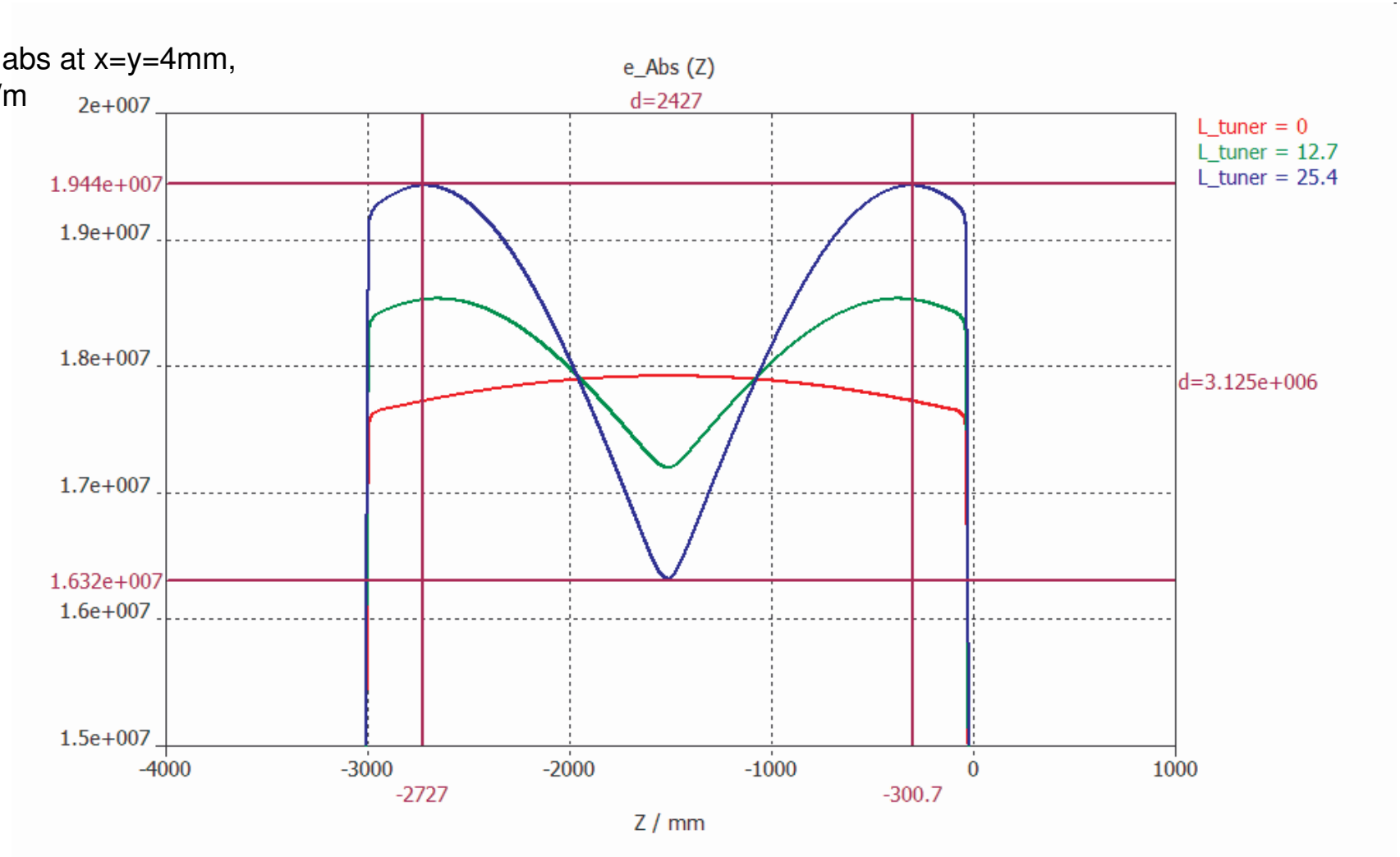
Tuning range for two tuners (synchronous movement) is **<u>274 kHz</u>**



Longitudinal distortion of electric field distribution in quadrants with plungers.

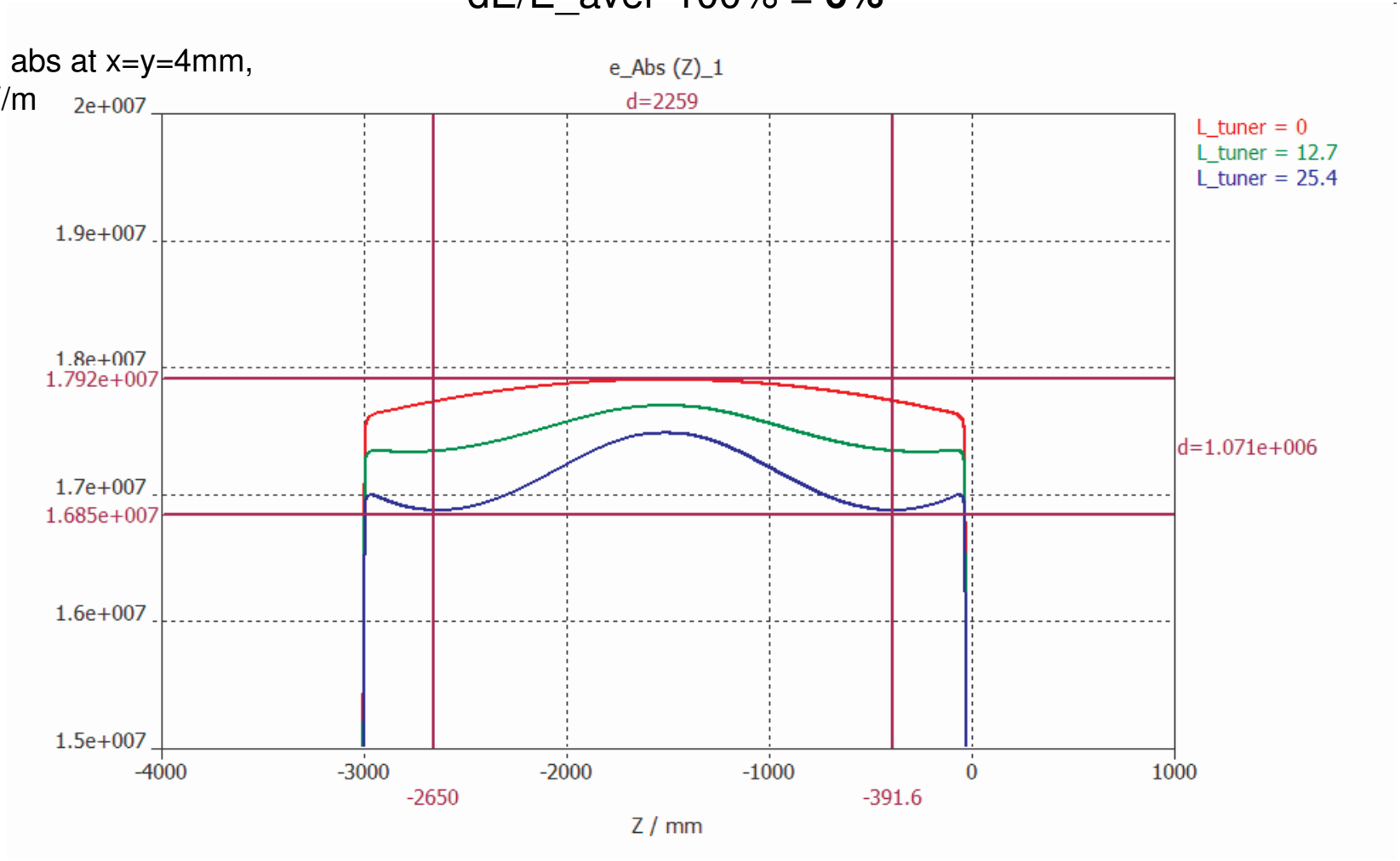
dE/E_aver*100% = **17%** (initial 1,7%)

E abs at x=y=4mm, V/m



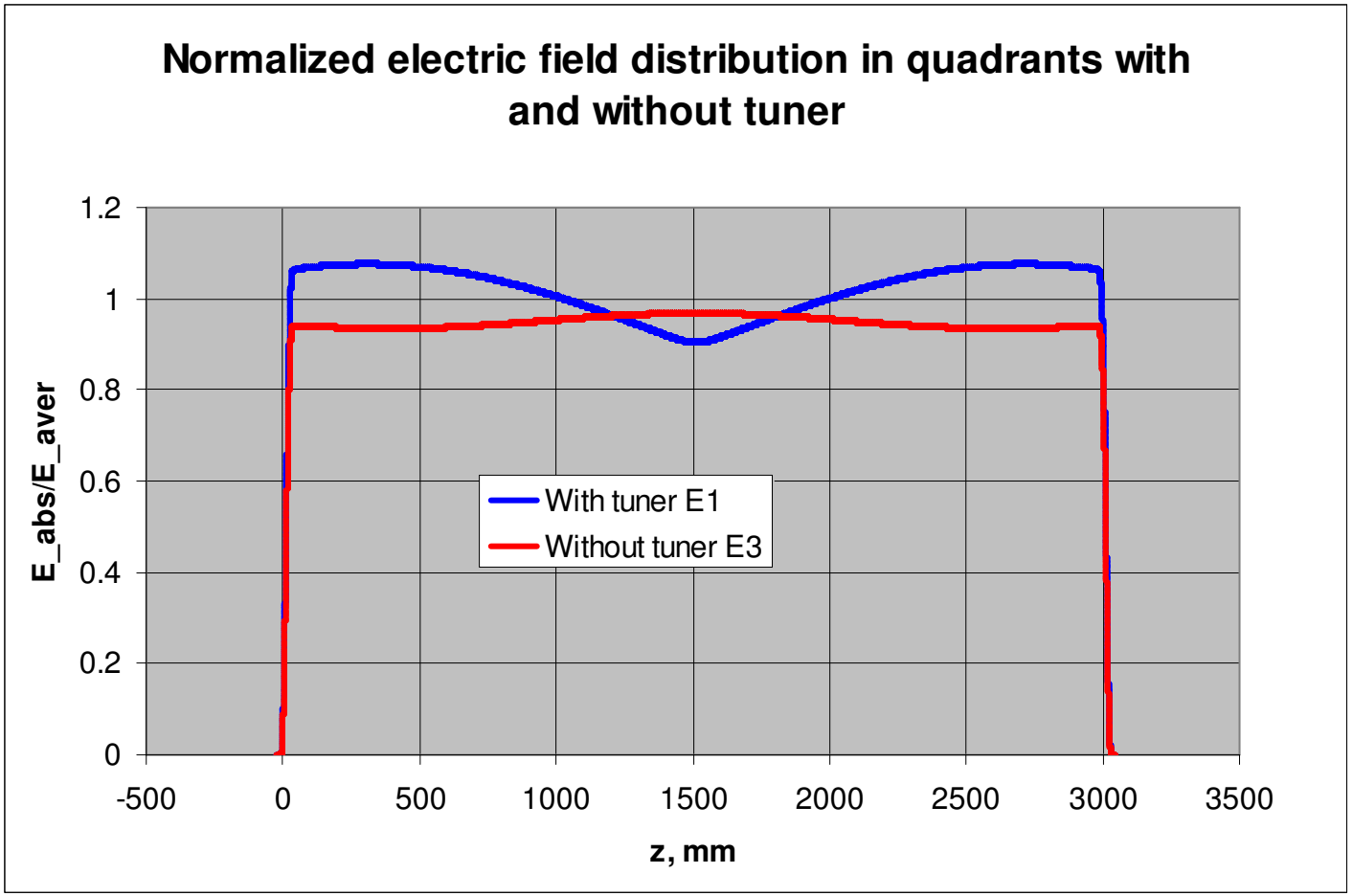
Longitudinal distortion of electric field distribution in quadrants without plungers.

dE/E_aver*100% = **6%**



Asimuthal asymmetry of electric field distribution in quadrants.

E1_aver/E3_aver*100% = **7.8%,** locally **20%**



Conclusion

- The tuners are not effective very much.
- Because the field distortion they cause, they can be used during “warm up” only